

# A new method in reminder therapy technique for ceasing digit sucking habit in children

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*The parents' task in preventing the practice of digit sucking habit in children during night time is difficult. The present article introduces a new method called "long sleeve gown". The gown has the advantage of making it difficult for the child to get his/her hand out from the sleeve so that the child cannot suck his/her digit during sleeping.*

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## INTRODUCTION

Habit as defined by Allen<sup>1</sup> is a fixed practice produced by constant repetition of an act. At each repetition it becomes less conscious and if repeated often enough, may be relegated to the sub-conscious. Digit sucking habit is an undesirable oral habit which is commonly seen in children and it is recognized by the placement of the thumb or one or more fingers in varying depths in the mouth.<sup>5</sup>

The prevalence of digit sucking habit as reported in dental literature varied among different investigators from 1.7% to 47% in children. However, the majority of investigators are in agreement that such habit is the most common oral habits seen in children and the thumb is the mostly used digit.<sup>3,4,6,10,12,14,16</sup>

The effect of practicing digit sucking habit on the occlusion has been identified by many investigators.<sup>4,10-13</sup> These include flared and spaced maxillary anterior teeth, anterior open bite and the probability of developing Class II malocclusion. Other effects, which can also arise from the habit in children, are deviation in root morphology, swallowing pattern, speech and child psychology.

In order to cease digit-sucking habits in children, several clinical treatments have been documented and implemented in previous literature. The most common treatment has concentrated on the reminder therapy technique. Two methods that belong to reminder therapy technique were previously suggested and applied. These are: (1) the response prevention therapy and (2) the appliance therapy. The former involves the application of bitter taste solution, thumb guard, mitten, wear-

ing socks, boxing gloves, thumb splint, adhesion tape and others.<sup>2,8,15</sup> The latter involves the use of orthodontic appliance either fixed or removable of various designs in order to make the digit sucking habit rather unpleasant and difficult to be practiced by children. However, when reviewing the above mentioned methods, the majority were found to be either difficult to implement on children, or can be easily removed by the child or does not prevent the child from practicing the habit or may cause possible hazard to the child's digit and/or hand e.g. obstruction of blood flow, hand/digit sweating, and possibility of infection or are considered to be more of a torturing method.

The proper timing of digit sucking treatment still remains a considerable controversy. Van Norman<sup>17</sup> suggested that the best course of action is simply to ignore it until the child has reached the age of reason, which is around age 5 or 6. Many children will discontinue the habit themselves as they become more active in play time or when they start school. However, when a child is 5 or 6 and there appears to be no cessation of the habit and there is damage occurring, it is time to consider help. Ignoring the habit beyond this point will only increase the developmental anomaly as well as habituate the behavior more firmly.

Clinical experience has indicated that children do practice digit sucking habit more often during rest and sleeping time. In contrary, they tend to reduce practicing sucking habit as they become active in play time and when they start school. Although parents are able to observe their children during day time and continuously remind them to stop practicing the digit sucking habit, the task in controlling the habit during night time when both parents and children are sleeping still remains a major difficulty. Further, child cooperation during treatment and parents attitude regarding the importance of ceasing digit sucking habits in children, before permanent dentofacial deformities occur, determined the success rate of clinical management.

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A review of literature indicated the need to develop a simpler method, which can be applied during child sleep and is able to eliminate the drawback, which arises when applying most of the available methods in reminder therapy technique to prevent digit sucking habit.

### MATERIALS AND METHODS

In an attempt to break digit-sucking habits, a new method was developed and called "long sleeve gown." This include designing a sleeping gown with long sleeves unbuttoned from the wrist of the child's hand to cover the fingers and extended by an arm length material (double the normal length) (Figure1). This method does not prevent the movement of the hand but makes it difficult for the child to get his/her hand out from the sleeve such that the child cannot suck his/her digit. A soft cotton and decorated fabric that is appealing to children were used for fabricating the gowns.

For preliminary clinical trial the present method was applied on one child (girl) aged 4 years old who regularly practices thumb sucking habit mainly during sleeping time. Before the suggested treatment method (long sleeved gown) was implemented and in order to enhance parent's and child cooperation, a small presentation was given by the author to illustrate the adverse effect of practicing digit sucking habit on dental occlusion and facial esthetic. This presentation was delivered using clinical slides, study models of patients who had been affected from practicing the habit.

The newly suggested method for habit cessation was introduced to the child and her mother and the child was given a long sleeved gown of her size to wear during bed time. From day one of this trial, the mother was asked to apply this method and encourage her child to wear the long sleeved gown as a base line. She was also requested to observe her child during sleep at least once during night time.

Regular visit to the clinic was arranged on a weekly schedule for both the mother and child. During the visit, the investigator interviewed the child and the mother for a method implementation and personal observation. For treatment success, two objectives were to be achieved. First, the child is wearing the gown regularly before bed time, and the second, the child is not able to practice the sucking habit while wearing the gown during sleep. If these objectives are achieved, the mother was instructed to continue implementation of the method until the child quit the habit. The present method was used in conjunction with the program of positive reinforcement to cease the digit sucking habit.

### RESULTS AND DISCUSSION

A regular interview of the mother regarding acceptance by the child of the present method and its effectiveness in preventing the sucking habit revealed the following:

During the first 2 to 3 days of applying the sleeping gown, the child was happy wearing it. It was considered

as a playing toy by the child, after which the child started to develop some resistance in wearing the gown. However, the mother indicated that with more stressing on positive reinforcement attitude, including child motivation and the mother attending the child during sleeping time till the child slept, she gradually eliminated resistance in wearing the new sleeping gown. According to the report by the mother, the first ten days were the most critical time, which determined the acceptance by the child of the present method.

With regards to the whether the child was able to reach her thumb and practice the sucking habit while wearing the gown, the mother confirmed that in no instance that her child was able to practice the habit during the application of the present method and very minimum disturbance to sleep was noticed.

The present method proved to have a number of advantages over the other used methods in reminder therapy technique for ceasing digit sucking habits in children. Levin<sup>8</sup> described a method of altering the child's pajamas so the child's hand cannot be moved to the mouth and the sucking habit is rendered impossible. This method was not recommended by some since this may only increase the child's frustration and wakefulness.<sup>9</sup> The present method does not prevent the movement of the hands like previously mentioned, but makes it difficult for the child to get his/her hand out from the sleeve such that the child cannot suck his/her digit during sleeping.

Methods like using tape or plaster on the affected digit causes the digit to sweat and be more liable for infection, while using gloves wrapped around the wrist have the risk of blood contraction or can easily be removed by the child during sleep.<sup>2</sup> Clinical experience also indicated that the use of bitter taste painted on the affected digit is of a limited value.<sup>15</sup> In addition, decalcification of enamel surfaces and gingival inflammation are an adverse effects which might occur as a result of using orthodontic habits breaking appliances for ceasing digit sucking habits of children.<sup>7</sup>

The present method overcame all the previously mentioned shortcomings of the indicated methods. It provided free movements of hands during sleep, consequently causing the least disturbance. It also does not cause digit sweating, no risk of blood constriction, cannot be removed, and yet the child find it difficult to get the hand out the long sleeves and practice the sucking habit.

It is well understood that the value and the role of applying positive reinforcement program is important in the success of ceasing any habits.<sup>17</sup> This was also applied during the implementation of the present method. Mother has confirmed the importance of positive reinforcement attitude during the treatment from digit sucking habit.

It is recommended that this method be used for children, who do practice digit sucking habits mainly at bet



Figure 1, a. Shows the child wearing the gown before going to bed. Notice the sleeves are folded and buttoned to the side arm for the child's convenience before sleeping.

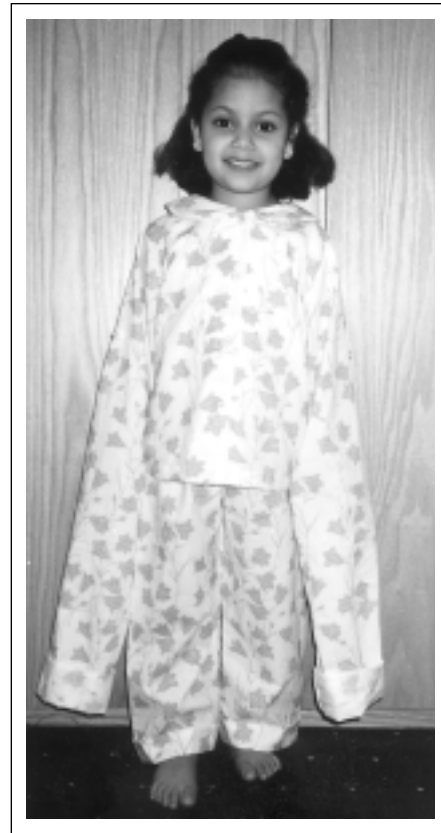


Figure 1, b. Shows the sleeves unbuttoned and extended an arm length. This is done by parents when the child falls to sleep.

time, while maintaining a good follow-up by parents during day time. It is also highly recommended that positive reinforcement program is applied together with the present method designed for ceasing digit sucking habit in children. Further, studies are required to evaluate the present method on sufficient number of children.

## REFERENCES

1. Allen KR. Oral habits. *Pediatric Digest* 6: 75-88, 1964.
2. Benjamin L. The beginning of thumb sucking. *Child development*, pp, 1065-1078, 1967.
3. Farsi N. Prevalence of sucking habits and their associated effects on primary dentition of pre-school Saudi children in Riyadh City. MS Thesis, King Saud University, 1995.
4. Fukuta O. Damage to primary dentition resulting from thumb and finger (digit) sucking. *J Dent Child* 63: 403-7, 1996.
5. Gellin ME. Digital sucking and tongue thrusting in children. *Dent Clin North Am* 22: 603-619, 1978.
6. Infante PF. An epidemiologic study of finger habits in pre-school children, as related to malocclusion, socioeconomic status, race, sex and size of community. *J Dent Child* 43: 33-38, 1976.
7. Kvan E. Adverse effect of orthodontic treatment, Ch 9. Introduction to Orthodontics, Tandlakarforlaget, Stockholm 95-85, 174-17-3, 1985.
8. Levin B. Chronic thumbsucking in older children. *J Can Dent Assoc* 171-173, 1958.
9. Morley, McIntyre. Management of non-nutritive or digit sucking habits in children. A practical approach. *Pediatr Dent J* 16: 969-971, 1994.
10. Nanda RS, Khan I, Anand R. Effect of oral habit on the occlusion in pre-school children. *J Dent Child* 39: 449-52, 1972.
11. Paunio P, Rautava P, Sillanpaa M. The Finish family competence study: the effect of living condition on sucking habits in 3 years old Finish children and the association between these habits and dental occlusion. *Acta Odontol Scand* 51: 23-29, 1993.
12. Popovich F, Thompson GF. Thumb and finger sucking: its relation to malocclusion. *Am J Orthod* 63: 148-155, 1973.
13. Ravn JJ. Sucking habits and occlusion in 3 years old children. *Scand J Dent Res* 84: 204-209, 1976.
14. Shoaf HK. Prevalence and duration of thumb sucking in breast-fed and bottle-fed children. *J Dent Child* 46: 126-9, 1979.
15. Sterzik O. Recent viewpoint on the sucking problem and on the treatment of thumbsucking. *Zahnartzl-Rundsch* 77: 277-82, 1968.
16. Traisman AS, Traisman HS. Thumb and finger sucking: a study of 2650: infants and children. *J Pediatr* 52: 566-572, 1958
17. Van Norman R. Digit sucking: its time for an attitude adjustment or a rational for the early elimination of digit-sucking habits through positive behavior modification. *Int J Orofacial Myology* 11: 14-21, 1985.